

M/045/017

FAX TRANSMITTAL

**STATE OF UTAH
DEPARTMENT OF ENVIRONMENTAL QUALITY
DIVISION OF WATER QUALITY**

**DOGM
MATERIALS PROGRAM
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TO: Wayne Hedberg

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AGENCY/FIRM: DOGM

PHONE #: _____

NUMBER OF PAGES TO FOLLOW: _____

SUBJECT: Closure Plan For Dump #1

Barrick Mercur

FROM: C.C. Patel

AGENCY/FIRM: Div. of Water Quality

PHONE #: 538-6146

DRAFT

August 18, 1993

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LETTER

Mr. Glen Eurick
Environmental Affairs Coordinator
Barrick Mercur Mines, Inc.
P.O. Box 838
Tooele, Utah 84074-0838

RE: Closure Plan Approval
Valley Fill Area No. 1

Dear Mr. Eurick:

We have concluded the review of your proposal for the closure of the Valley Fill Leach Area No. 1 which was originally submitted to us on November 2, 1992. Several reviews, meetings, phone discussions and site inspections have taken place since then to resolve the issues of concern to Barrick Mercur and the Division of Water Quality.

It is stated by Barrick that the gold recovery at this facility using cyanide solution ceased July 15, 1988. The fill has since undergone dewatering of subore, process pool, leakage collection

system, and neutralization by flushing with about 1,976,715 gallons of fresh water and 7,630,314 gallons of precipitation water. Samples taken during 1991 and 1992 have shown less than 1 mg/l of free, total and WAD cyanide in the water coming out of the leak collection system.

The following is the agreed upon closure plan for Valley Fill Area No. 1:

1. Shape the valley fill to provide a 2:1 surface slope and to fill voids between the subore and the liner perimeter. No leached material shall progress outside the liner perimeter.
2. Install a clay cap on the leached ore with a compacted thickness of 12 inches. The clay cap will have a saturated hydraulic conductivity of 5×10^{-7} cm/sec or less, as measured using ASTM Method D-5084 (triaxial permeability with back pressure on undisturbed samples extracted with thin wall Shelby tube). The samples for these laboratory tests shall be extracted every 20,000 sq. feet.
3. The clay cap will be overlain with bulk fill consisting of run-of mine material from dumps or operating pits. It will be used to fill the west, south, and east sides of the dump to meet the existing topography and to shape the existing 1.5:1 north slope to a 2:1 gradient. The fill will reach a maximum height of about 22 feet along the side slopes.
4. All precautionary measures will be taken to protect the integrity of the low permeability clay cap during installation of the bulk fill. Lift placement will proceed from slope bottom to top with no downslope dozing across the underlying clay.

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5. A 3-foot layer of subsoil will be installed on the bulk fill to allow a smooth compacted running surface for placement of future mill feed ore. The sources of subsoil are from topsoil stripped areas within future mining or dump limits. The subsoil will be compacted by track or wheel rolling.

This layer will have a surface slope of two per cent.

6. Upon cessation of the use of capped valley fill as a stockpile area, the subsoil will be scarified at a nominal 12-inch depth to accommodate vegetative root penetration, and a layer of 12 inch top soil will be laid on the subsoil with no compactive efforts.
7. An appropriate native seed mix will be applied to the topsoil to promote vegetative growth. Post closure monitoring of the plant growth will continue until adequate plant growth has been attained, is self propagating, and is in accordance with the Utah division of Oil, Gas, and Mining (DOGM) surety bond release provisions.
8. Lined ditches will be established along the west and east sides to allow non erosional runoff from the south side of the dump to drop points on the north side, which will convey any water into the existing Mercur Canyon drainage below. The surface runoff diversion structures will be sized to accommodate the 100-year, 24-hour storm event. They will be constructed as V ditches, with nominal 2:1 side slopes. there will be a rockfill lining, with particles sized to withstand the expected flow velocities to control erosion. The lining thickness will be dependent on the particle sizing and erosive capacity of the flows. The design will conform to the existing DOGM permit criteria for runoff control and erosion minimization.

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9. The operating pregnant solution pumping system, and the leakage collection pumping system will be left in place at least for the duration of the post closure water quality monitoring period, and should not be removed without prior approval of the Division of Water Quality.
10. The post closure monitoring period should continue at least as long as this mine remains operational. This may have to be extended based on the data gathered during this period. All of Area No. 1 water quality monitoring will conform to existing practices and procedures and monitoring parameters either currently being performed as per ~~at~~ Groundwater Discharge Permit No. UGW450002 and the Sampling, Handling and analysis Plan therein, or as further negotiated with the DWQ pursuant to the applicable surface or groundwater regulatory programs. All data collected will be submitted to the DWQ within 15 days from the end of each calendar quarter.
11. The final cover will be monitored by periodic inspections for cap erosion, settlement, animal burrows, drainage ditch conditions, etc. Immediate repairs will be undertaken as necessary, or as directed by the DWQ to return the area to the original postclosure conditions.
12. This closure does not constitute to be a clean closure and the facility remains classified as " Existing Facility " as per R317. Based on the quality and quantity of leaks, a groundwater discharge permit may be required of Barrick Mercur.
13. This closure shall be considered independent of future closures for Areas 2 and 3. No provisions of this closure plan shall be construed as precedence setting. The future

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Mr. Glen Eurick
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closures shall be based on the regulations in force at the time, and the conditions existing
at a particular site.

We understand that Barrick is planning to start installation of the low permeability clay cap after
the 1993 expansion of the tailings impoundment is completed.

Please call C.C. Patel or Dennis Frederick of this office if you have any question or need further
assistance.

Sincerely,

Utah Water Quality Board

Don A. Ostler, P.E.

Executive Secretary

DAO:ccp:

cc: Division of Oil, Gas and Mining

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Mr. Glen Burick
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Tooele County Health Department

Dennis Frederick, GW Section

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FILE:BARRICK MERCUR

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